

**Third Quarter 2013**



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## DEFINITIONS

**Airport Noise Zone (ANZ):** The area surrounding the airport where aircraft noise levels are equal to or greater than DNL 65.

**Code of Maryland Regulations (COMAR):** Requires the MAA to control residential and commercial development in the ANZ.

**Decibel (dB):** A logarithmic unit of measurement of sound intensity. "A" weighted decibels have been adjusted to account for the response of the human ear to certain sound levels.

**Day-Night Average Sound Level (DNL):** A measurement unit of 24 hours of noise (midnight to midnight) that accounts for the increased impact of night-time noises.

**Sound Exposure Level (SEL):** A term used to describe the total sound energy from a single aircraft noise event. It takes into account both the maximum noise level (Lmax) and the duration of the event.

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## **SUMMARY**

This report provides a review of the aviation noise abatement program for the third quarter of 2013 (July 1 to September 30). Included in this report are updates on the various types of aircraft operations, and a summary of complaints received about aircraft noise. Information on noise levels at permanent noise monitoring sites will be provided in future reports when new noise monitors are installed.

Average daily jet flights were approximately 650 per day during the 3rd quarter of 2013, compared to 679 per day for the 3rd quarter of 2012.

- Night-time operations averaged 69 per night for the 3rd quarter of 2013, compared to 77 per night during the 3rd quarter of 2012.
- The percentage of re-certified (hush-kitted) aircraft operating at Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) was 0 percent during the 3rd quarter of 2013, compared to .2 percent during the 3<sup>rd</sup> quarter of 2012.
- A total of 142 calls and e-mail complaints were made to the Noise Abatement Office during the 3rd quarter of 2013 compared to 311 calls/e-mails during the 3rd quarter of 2012.
- The Airport operated in west flow operations for 75 percent of the time during the 3rd quarter of 2013.

## **Aviation News Items of Interest:**

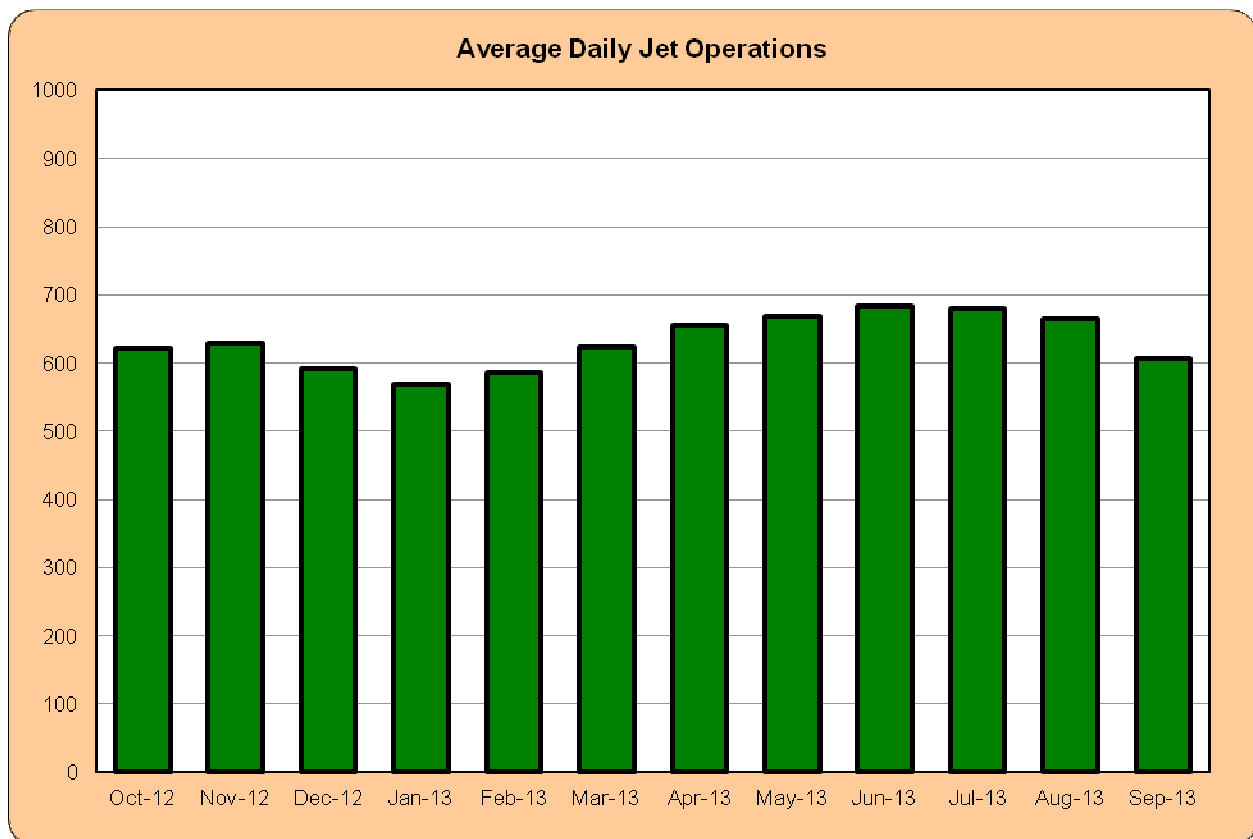
- An improved Observation Gallery at Baltimore/Washington International Thurgood Marshall Airport is now open to the public. The Gallery is located on the upper level of the Airport between Concourse B and C. Some of the new amenities include exhibits related to aviation, a children's play area, a food and beverage concession, and charging stations.
- The Federal Aviation Administration adopted a ban on Stage 2 jets under 75,000 pounds. These jets will be banned after December 31, 2015, under a final rule issued by the FAA on July 2, 2013. About 599 Stage 2 aircraft are affected by this rule.
- BWI Marshall Airport received a \$5.7 million federal grant from U.S. Department of Transportation to support the runway safety project. The funds will complete site work and storm water improvements for Runway 15R-33L and Taxiway D. The work is part of the comprehensive, multi-year series of Runway Safety Area improvements currently underway at BWI Marshall.

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**AIRPORT OPERATIONS**

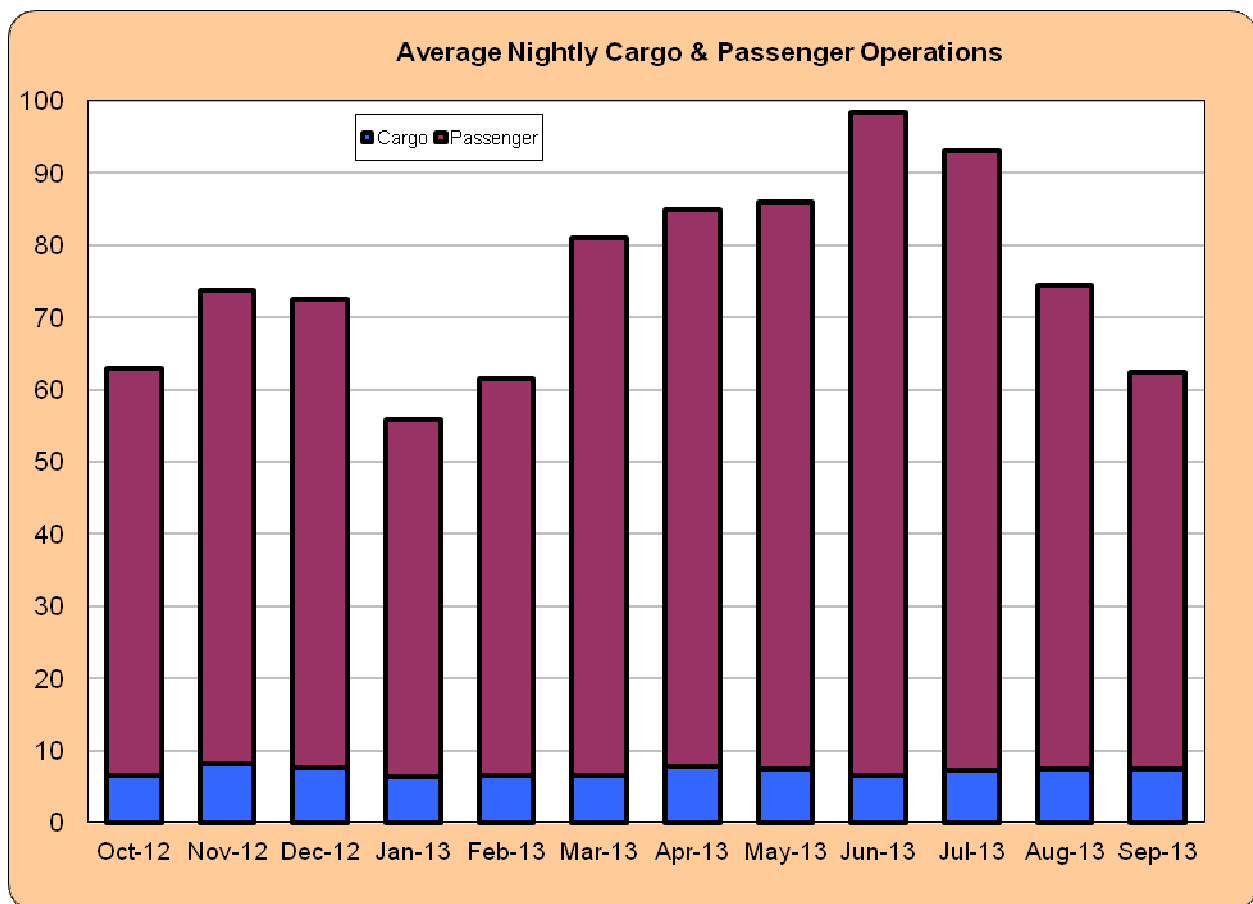
This section provides information on various types of aircraft operations at BWI Marshall, including the percentage of re-certified aircraft operating at the airport, and the percentage of aircraft operations on each runway.

The graph below shows the average number of daily jet flights for each month, including arrivals and departures by air carrier aircraft. Twenty-four hours of flights each day are averaged for each month to arrive at the results. The average daily number of jet operations during the 3rd quarter of 2013 was 650, compared to 679 for the 3rd quarter of 2012.



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This graph shows night-time air-carrier jet and cargo operations. A night-time operation is defined as an arrival or departure that occurs between the hours of 10 p.m. and 7 a.m. The average number of night-time jet operations was 69 per night during the 3rd quarter of 2013, compared to 77 per night for the 3rd quarter of 2012. The average number of night-time cargo operations was approximately 7 per night for the 3rd quarter of 2013, and 8 for the 3rd quarter of 2012.



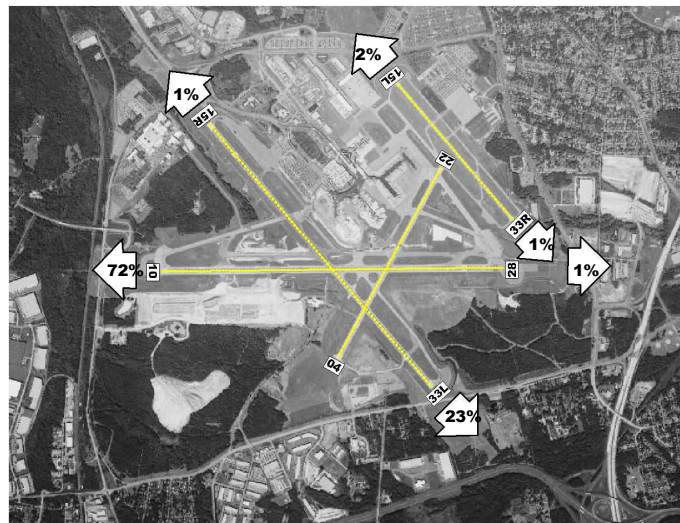


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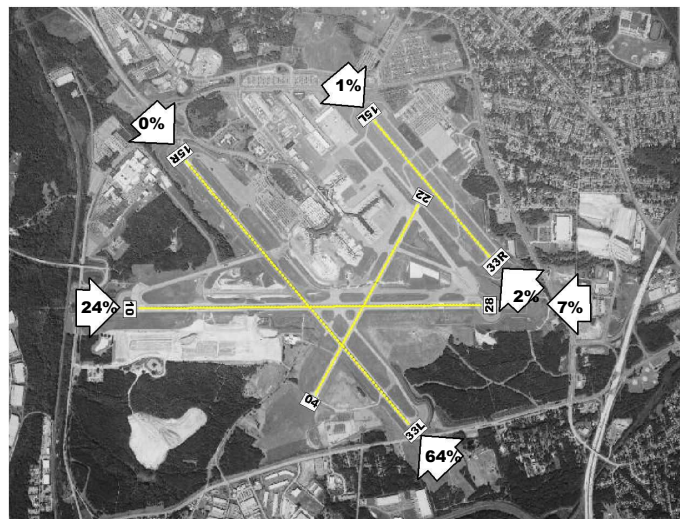
### Runway Use

The MAA implemented the Preferential Runway Use System to minimize the impact of aircraft noise on neighboring communities. Aircraft departures in west flow are more desirable since a smaller population is impacted by aircraft noise than when in east flow. Wind direction, weather and operational factors determine the direction of air traffic flow. Aircraft take off and land facing into the wind for operational and safety reasons. During west flow large jet aircraft take-off primarily from Runway 28 and land on Runway 33L. During east flow large jet aircraft take-off primarily from Runway 15R and land on Runway 10. The figures below show percentages of runway use for this quarter for all jets. Historical trends for prevailing winds result in an annual average west flow of approximately 70 percent.

**Jet Departures by Runway**



**Jet Landings by Runway**



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### **Flight Corridors**

The following page shows flight corridors (air traffic patterns) for all jet operations.

The data used to create the flight corridor map was taken from the aircraft noise and flight track monitoring system located in the Division of Noise, Real Estate and Land Use Compatibility Planning. The map shows the average number of flights per day for each corridor, the percentages of arrivals for each corridor, and the number of days with no flights. The category “all jets” includes commercial air carrier aircraft and private and corporate jets.

The purpose of the corridor map is to show the actual flight patterns in use at BWI Marshall, and the average number of daily flights for each pattern for the quarter.

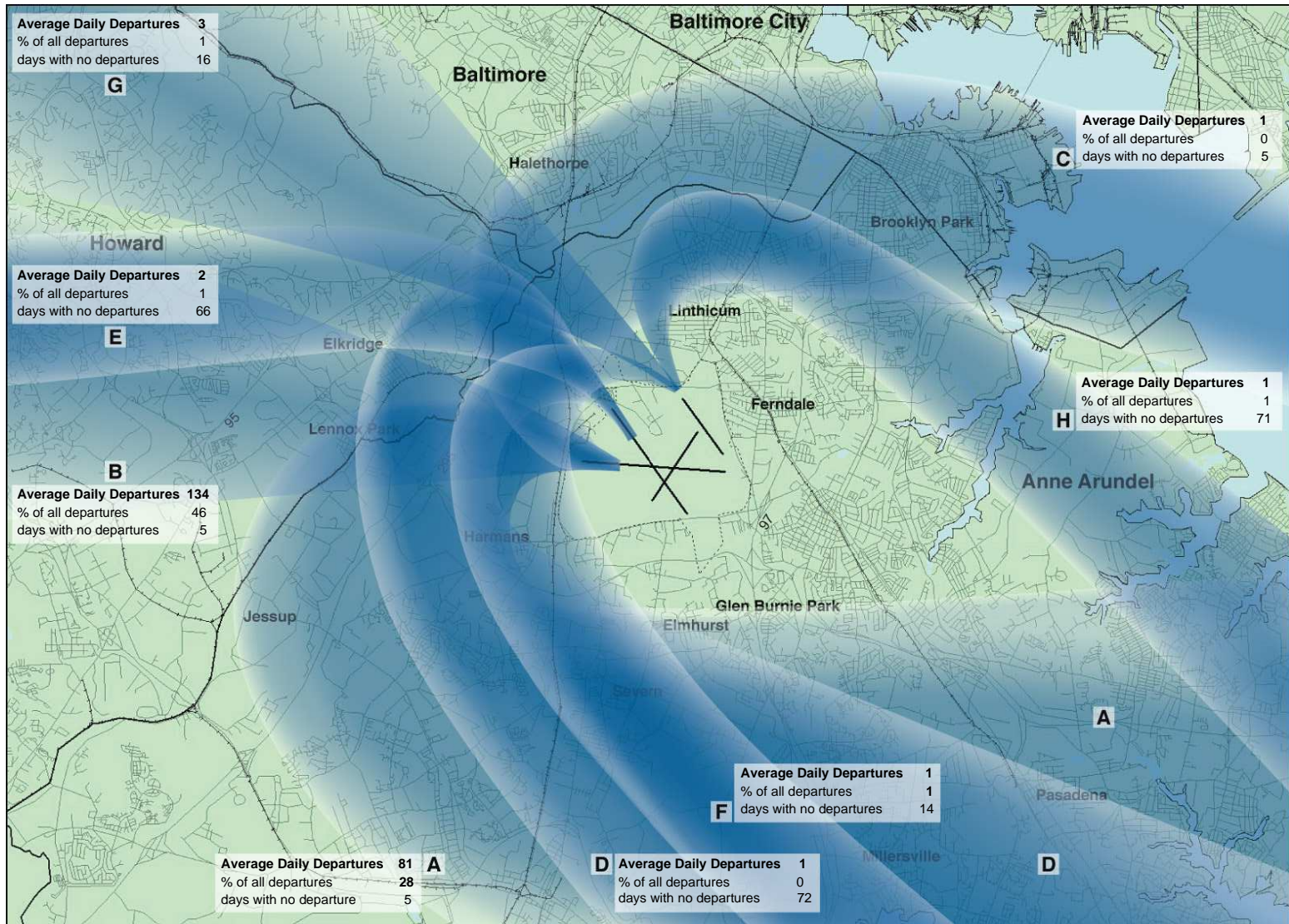
**All Jet Arrivals** shows that the most commonly used arrival pattern was corridor B, accounting for 57 percent of all arrivals, averaging 175 arrivals per day.

**Jet Departures in West Flow** shows that the most commonly used departure pattern in west flow was corridor B, accounting for 40 percent of all departures, averaging 114 departures per day.

**Jet Departures in East Flow** shows that the most commonly used departure pattern in east flow was corridor P, accounting for 20 percent of all departures, averaging 57 departures per day.



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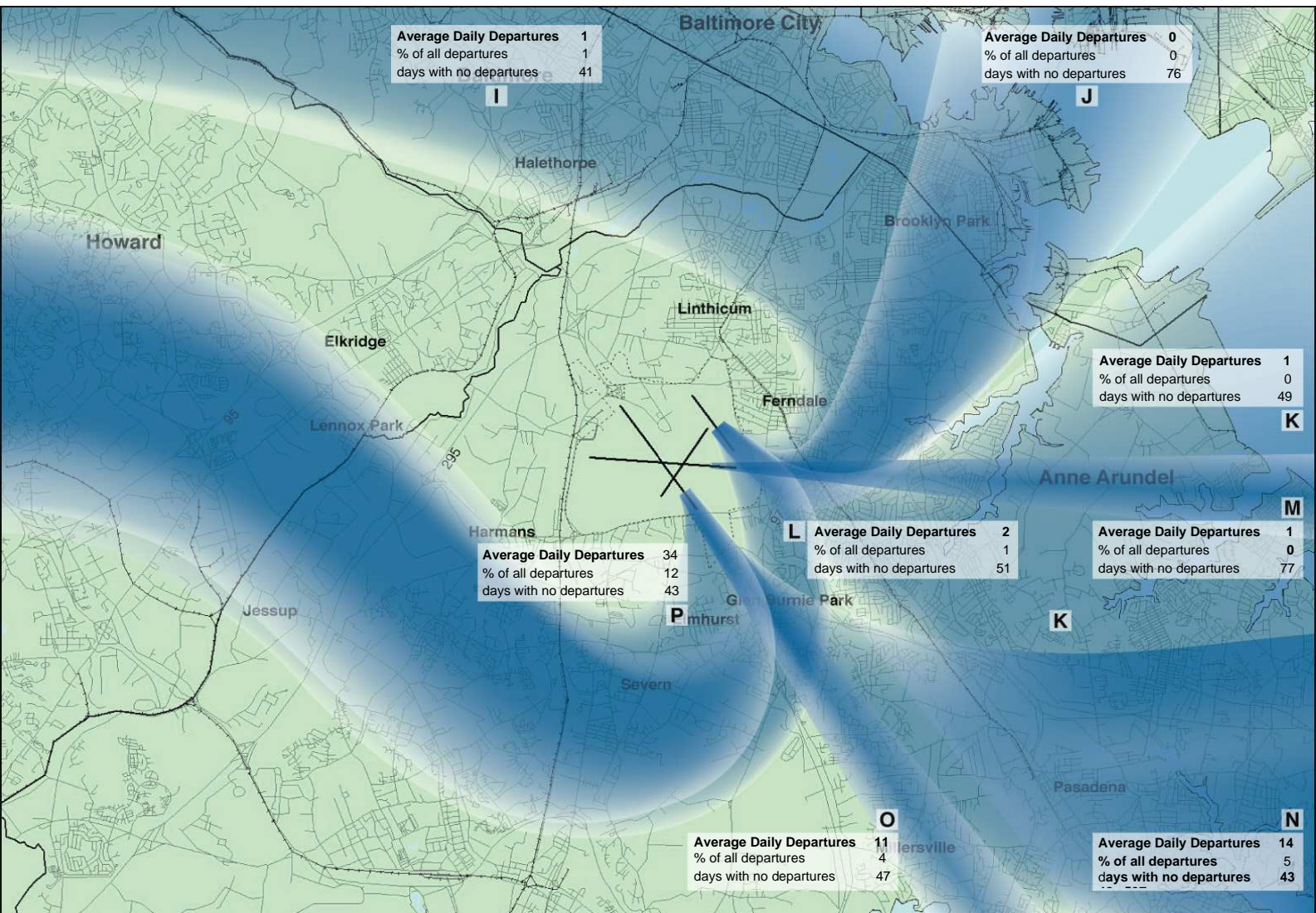


Scale in feet  
0 5,000 10,000

Jet Departures in West Flow



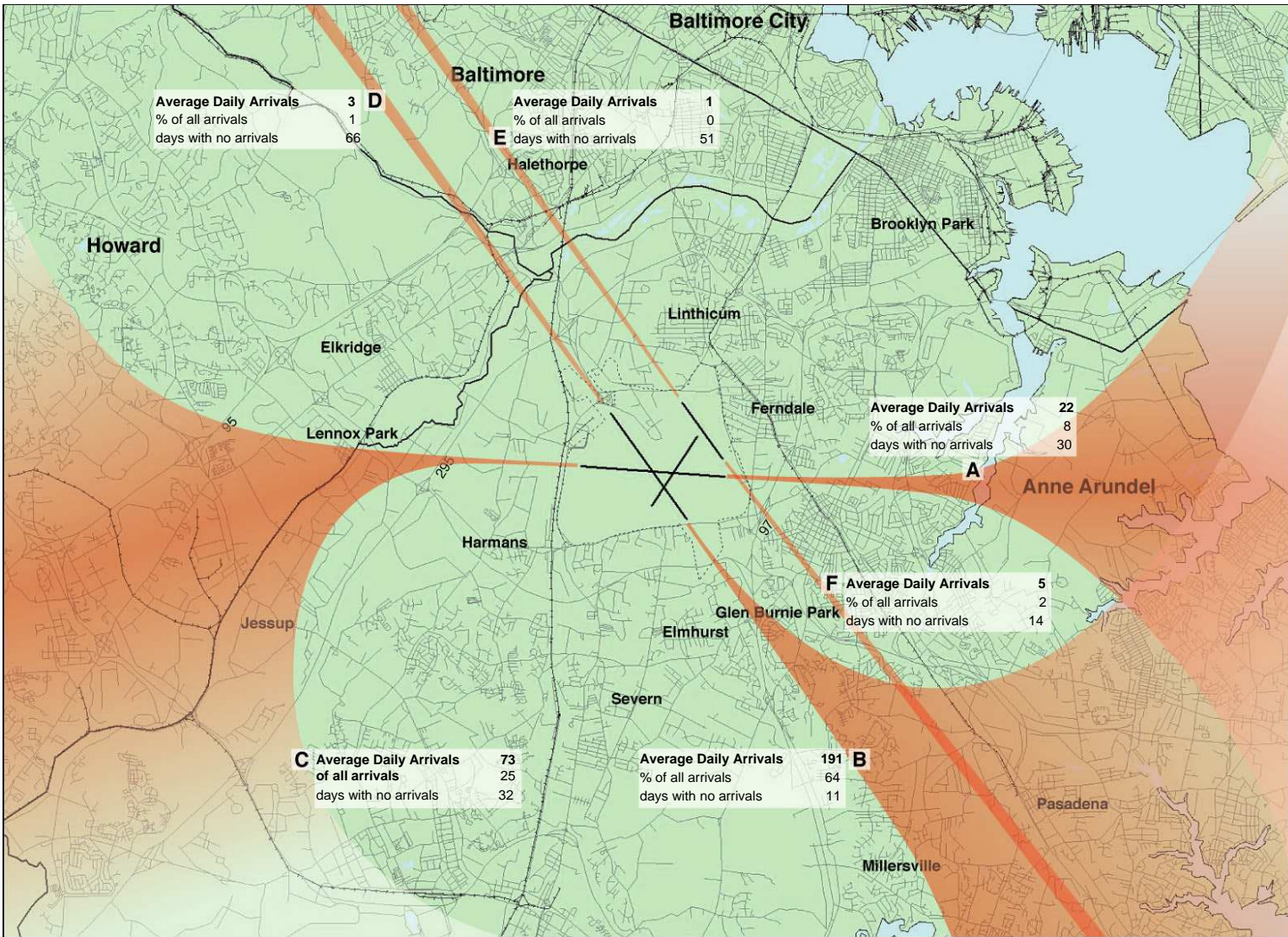
**Third Quarter 2013**



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**Third Quarter 2013**



Scale in feet  
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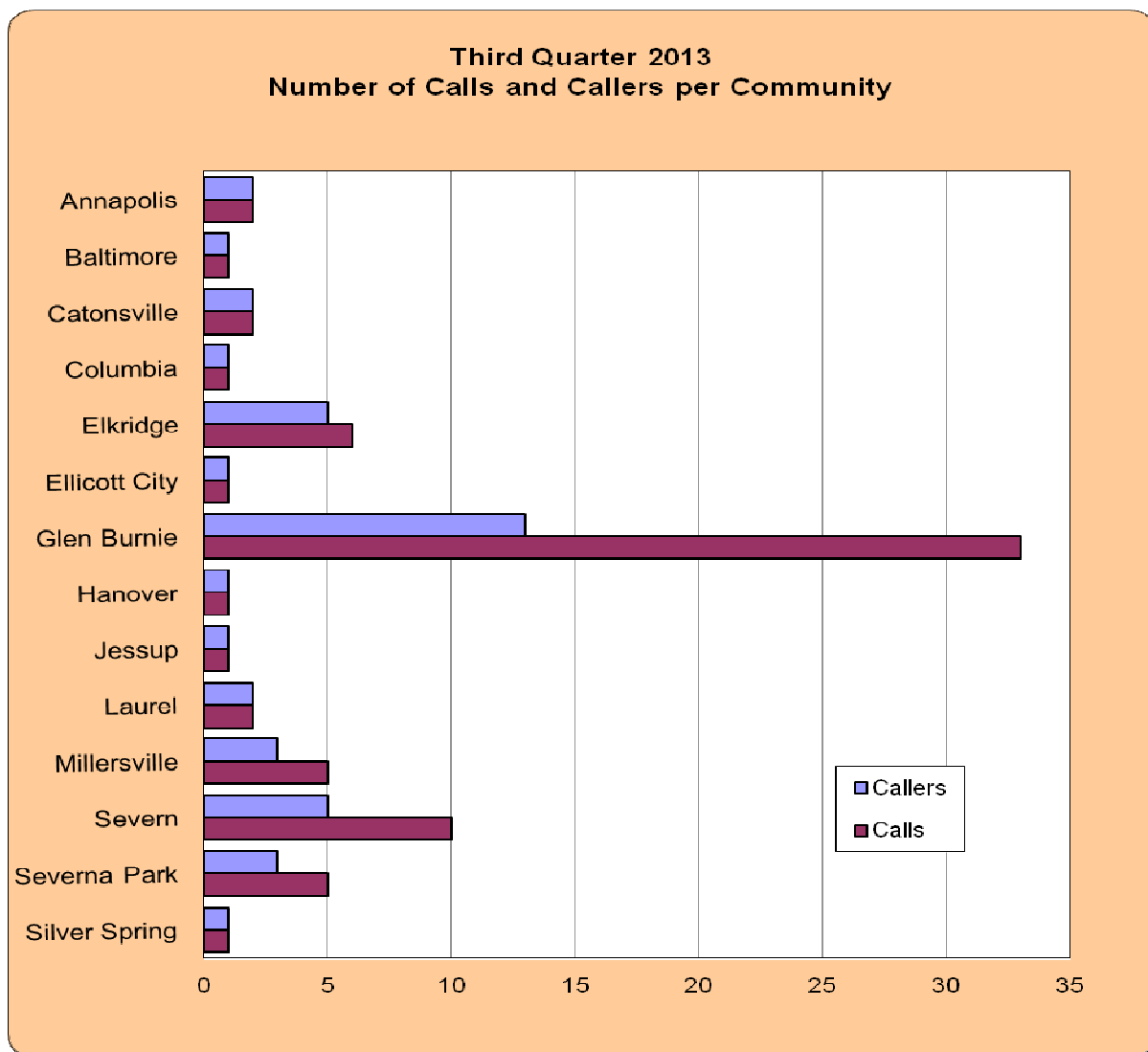
All Jet Arrivals

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### AIRPORT NOISE HOTLINE CALLS

The MAA maintains a 24-hour Airport Noise Hotline at **410-859-7021**. Staff is available during normal business hours to discuss aircraft noise complaints directly with callers. Voicemail is available for recording noise complaints at night and on weekends. The graph below shows the number of calls/e-mails and callers per community for the quarter.

There were 71 calls (41 callers) during the 3rd quarter of 2013 compared to 311 calls (202 callers) during the 3rd quarter of 2012. The large number of calls during the 3<sup>rd</sup> quarter of 2012 is due to runway closures.



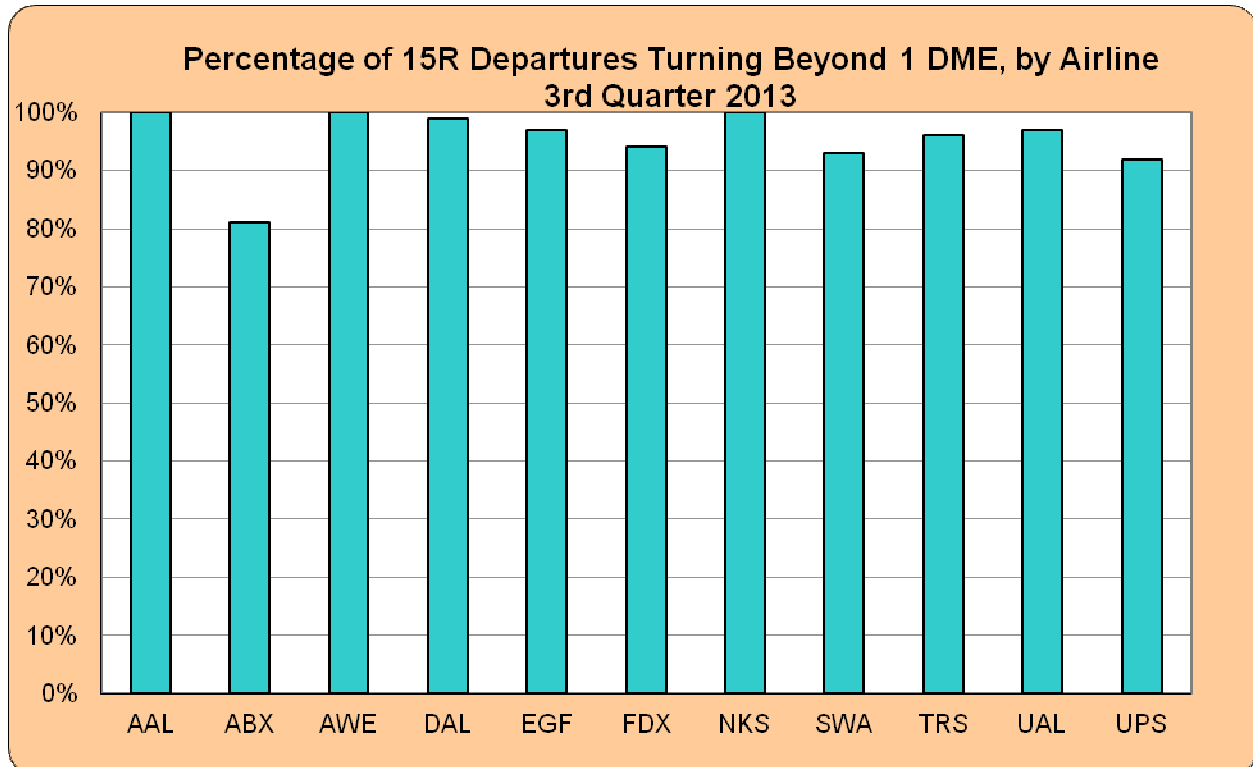
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## OBSERVANCE OF NOISE ABATEMENT PROCEDURES

In order to encourage on-going compliance with the voluntary noise abatement procedures developed for BWI Marshall, a Quarterly Airline Performance Report is generated for the major carriers and cargo operators. Data is obtained from our noise and flight track monitoring system and the three noise abatement procedures of most interest to the local communities are evaluated. These procedures are:

1. Runway 15 Right departures initiating their right turns at, but not prior to, 1 DME
2. Runway 33 Left Visual Approach arrivals maintaining 3,000 feet altitude or higher until reaching 10 DME from the Airport
3. Runway 28 departures initiating their turns at, but not prior to, 3 DME

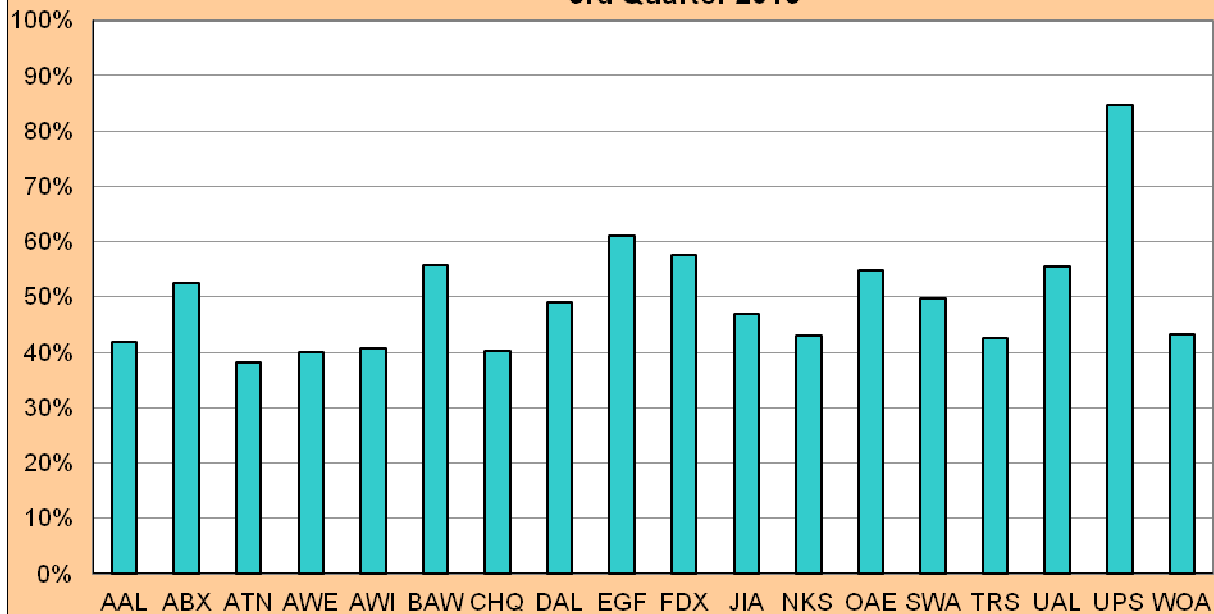
The following graphs were derived from the Quarterly Airline Performance Report for the 1st quarter of 2013. They show the percentage of flights for each airline which comply with each of the three procedures. DME stands for Distance Measuring Equipment, and is measured slant-range from the navigational aid located near the center of the Airport. One DME is one nautical mile.



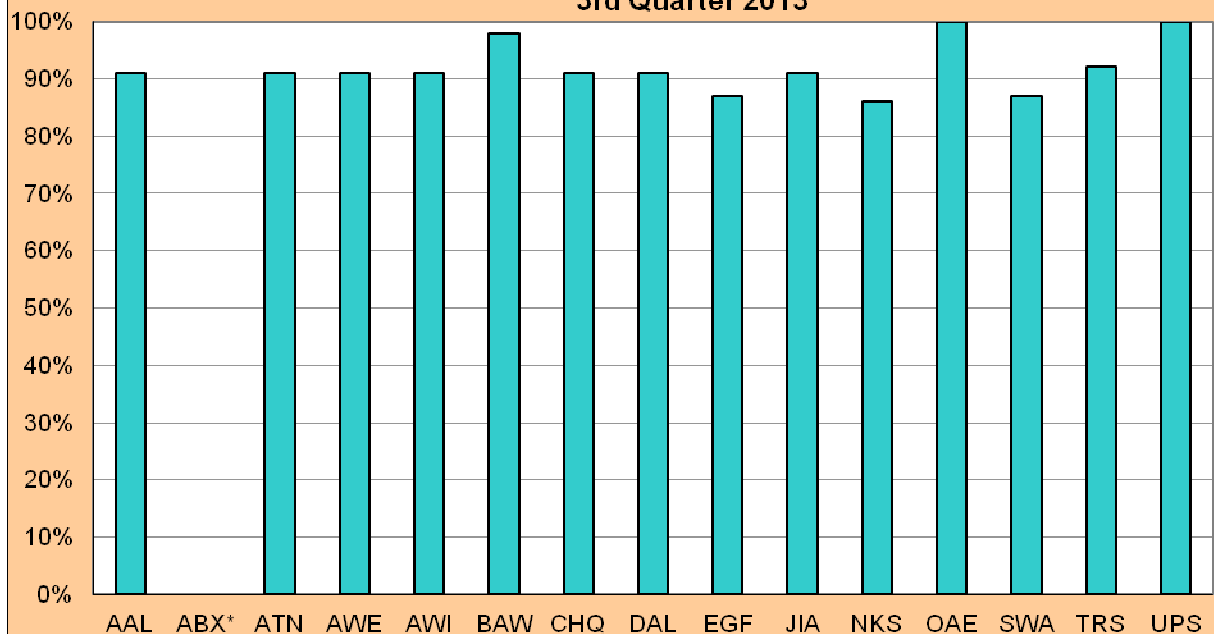


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**Percentage of 33L Arrivals Remaining Above 3,000' at 10 DME by  
Airline  
3rd Quarter 2013**



**Percentage of R28 Departures Turning Beyond 3 DME, by Airline  
3rd Quarter 2013**



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**COMMUNITY OUTREACH**

The MAA engages in on-going efforts to enhance the level of communication and interaction between the Airport and area residents. The MAA Community Outreach Programs encourage the exchange of information between the MAA and local community groups and residences by providing a contact point for listening to and responding to Airport-related community concerns. These programs also supplement the efforts of the BWI Marshall Neighbors' Committee to promote the active participation of local residents in Airport issues.

The Division of Noise, Real Estate and Land Use Compatibility Planning keeps track of services provided to the local community to promote public education and communication, and of the number of responses to requests for portable noise monitoring. Specific services or activities provided by the MAA and the Noise Abatement Office are listed below, along with the number of contacts.

**Public Education Events & Activities during the 3rd Quarter of 2013**

Committee Meetings	1
Community Meetings	1
Community Noise Monitoring Reports	3
Airport Zoning Permits	63
Mailings	2

**COMMUNITY ENHANCEMENT GRANT PROGRAM**

Maryland Senate Bill 276 established an 11-member "Citizens Committee for the Enhancement of Communities Surrounding Baltimore/Washington International Thurgood Marshall Airport." The intent of this legislation is to provide some benefit to those citizens living in communities impacted by the daily operation of BWI Marshall by allowing them the opportunity to apply for grants for transportation-related projects such as sidewalks, speed humps, street lights, etc. These communities must be located within the most recently certified Airport Noise Zone or within two miles of the outermost noise contour.

The Community Enhancement Grant Committee met on August 14, 2013. Seven grant applications were submitted for review and five were recommended for approval. The Linthicum-Shipley Improvement Association was awarded \$36,748 for sidewalk renovations. Orchard Club Condominium Association will receive \$8,375 for sidewalk renovations and \$23,500 for a walkway. Cohansey Courts Condominium Association will receive \$14,641 for a walkway and Gray's Luck Condominium Association was awarded \$10,200 for a fence.

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## **NOISE MONITORING PROGRAM**

The MAA operates a permanent noise monitoring system that operates 24 hours per day, seven days a week. The noise monitoring equipment in place at BWI-Marshall was installed in the late 1980's and is approaching the end of its useful life due to the age of the equipment and the inability to obtain replacement parts. The MAA is currently in the process of selecting a new system to be installed within the next 24 to 36 months. Once the new system is installed, we will resume the presentation of noise data by tables and graphs. In the meantime portable noise monitoring can be done upon request. Please contact 410-859-7380 to submit a request.

## **BWI MARSHALL NEIGHBORS COMMITTEE**

The BWI Marshall Neighbors Committee was established in December 1983 and serves as a liaison between the Airport and the surrounding communities to ensure continuing and timely discussion of mutual airport and community interests. The committee serves as a forum for exchanging information, ideas and suggestions.

Such interests include, but are not limited to:

- (1) ground access (highways, light rail, etc.)
- (2) long-range transportation planning issues
- (3) operational changes (construction, maintenance and air traffic control)
- (4) noise abatement and other environmental issues
- (5) parking and ground transportation
- (6) land use planning.

The Neighbors Committee consists of the following groups:

- Columbia Council
- Greater Elkridge Community Association
- Elmhurst Improvement Association
- Glen Burnie Improvement Association
- Glen Burnie Park Civic Association
- Ferndale Area Community Council
- Greater Pasadena Council
- Harmans Civic Association
- Linthicum/Shipleigh Improvement Association
- Severn Improvement Association
- Timber Ridge Improvement Association



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**AIRPORT NOISE ZONE**

The Maryland Environmental Noise Act of 1974 provides for the protection of citizens from the impact of transportation related noise. The aviation portion of the Act requires the MAA to create a certified Airport Noise Zone (ANZ) to control incompatible land development around BWI Marshall and a Noise Abatement Plan (NAP) to minimize the impact of aircraft noise on people living near the Airport. An ANZ and NAP were first established for BWI Marshall in 1976. Both were updated in 1982, 1988, 1993, and 1998. An updated ANZ was certified on November 6, 2007.

The ANZ is determined by a composite of three noise contours: a base year contour, a five-year forecast, and a ten-year forecast. The largest of the three contours in any area around the Airport determines the outline of the ANZ, thereby offering protection within the largest of the existing or future noise contours.

The contours depict the Day-Night Average Sound Level (DNL) around BWI Marshall. Both the State of Maryland and the FAA require the use of the DNL metric by all airports conducting environmental studies. The FAA also requires the use of its standard computer model for developing noise contours, known as the Integrated Noise Model (INM).

The 2007 ANZ is depicted on the following page.

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